

## ABSTRACT OF THE DISCLOSURE

A boom lift vehicle includes a tower boom pivotally coupled at one end to a vehicle base for tower lift function and rotatable relative to the vehicle base for swing function. A main boom is pivotally coupled to an opposite end of the tower boom for main lift function. A tower boom elevation angle is defined as a maximum allowable tower boom angle relative to the vehicle base for transport. When the tower boom is below the tower boom elevation angle, the main boom angle relative to gravity is maintained at a set point angle, which is determined as the main boom angle (1) at the start of the swing function or vehicle drive, or (2) at a conclusion of the main lift function when combined with at least one of the swing function or vehicle drive. Additional control of the tower boom is effected when the tower boom is above the tower boom elevation angle. In this manner, stability profiles are facilitated while expanding slope requirements of a similar weight vehicle or while maintaining existing slope requirements with a lighter vehicle. The improved boom control additionally provides for safer and smoother operation.